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## PATENT SPECIFICATION

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 DAVID FREDERICK WILLIAMS



## (54) DEODORANT COMPOSITION

(71) We, BEECHAM GROUP LIMITED, a British company of Beecham House, Great West Road, Brentford, Middlesex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to deodorant compositions comprising anti-oxidant and anti-bacterial compounds.

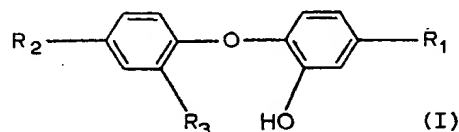
Most presently used deodorant compositions for human hygiene contain anti-bacterial agents. These products are thought to function because they prevent the growth of or destroy bacteria present on human skin which break down apocrine perspiration into unpleasant smelling byproducts. It is desirable to reduce the quantities of anti-bacterial compounds applied to the skin and so other deodorant processes have been investigated. For example human apocrine sweat can be broken down by oxidation and it has been suggested that the inclusion of an anti-oxidant (e.g. Vitamin E) into a deodorant composition helps to prevent odour forming processes. However, a composition which has an anti-oxidant as a sole active ingredient does not prevent the odour which is the result of bacterial action on perspiration.

We have now combined both these effects by incorporating both an anti-bacterial and an anti-oxidant into a deodorant composition. In this way less anti-bacterial agent need be applied to the skin to obtain deodorant properties.

Accordingly the present invention provides a personal deodorant composition comprising:—

(i) a cosmetically acceptable antibacterial agent effective in destroying or inhibiting the growth of bacteria normally present on the human skin which break down the constituents of human apocrine perspiration into unpleasant smelling byproducts, said anti-bacterial agent being hexachlorophene, dichlorophenol, trichlorophenol, tetrachlorophenol, di(trichlorohydroxyphenyl) ether, a *p*-hydroxybenzoic acid ester, *o*-phenylphenol,

trichlorocarbanilide, a quaternary ammonium compound or a compound of formula (I):



wherein R<sub>1</sub> is a chlorine or bromine atom, R<sub>2</sub> is a chlorine or bromine atom and R<sub>3</sub> is a hydrogen, chlorine or bromine atom, or a topically acceptable salt thereof.

(ii) a cosmetically acceptable anti-oxidant in an amount of from 0.2 to 5.0% by weight of the composition and

(iii) a cosmetically acceptable vehicle for (i) and (ii), ingredients (i) and (ii) constituting the only active ingredients of the composition.

Examples of suitable quaternary ammonium compounds are alkyl dimethylbenzyl ammonium chloride and cetyltrimethyl ammonium bromide.

Examples of suitable anti-oxidant materials include: butylated hydroxyanisole (B.H.A.); butylated hydroxy toluene (B.H.T.); di- $\alpha$ -tocopherol (Vitamin E); ascorbic acid (Vitamin C); 2,6-di-*t*-butylhydroquinone; propyl gallate.

The anti-oxidant preferably comprises from 0.2 to 2.0% w/w of the composition.

A preferred anti-bacterial compound for use in compositions of the invention is 2,4,4'-trichloro-2'-hydroxydiphenyl ether, known as Irgasan DP 300 (Registered Trade Mark).

Preferred anti-oxidant materials for use in conjunction with the above-mentioned anti-bacterial agents, particularly Irgasan DP 300, are B.H.T. and propyl gallate.

The compositions of the present invention may take the form of aerosol products; aqueous or anhydrous alcoholic or non-alcoholic emulsions; creams or clear liquids for application by squeeze packs; roll-on applicators or sticks; or for distribution in cellulose wadding or absorbant material such as paper tissues or cotton fabric for use as a sanitary

towel; or dry powders for application by puffer packs or aerosol containers.

Suitable vehicles for powder compositions include, for example, talc, starch, chalk, silica and magnesium stearate. Where the deodorant compositions are presented in the form of aerosols, appropriate fluorocarbon propellants are also incorporated in the composition.

The compositions of the present invention are illustrated by the following examples:

#### EXAMPLES

Deodorant products were prepared having the following formulations:—

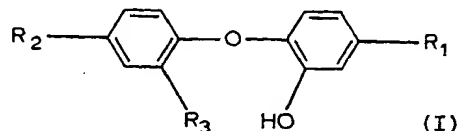
(a) Aerosol Deodorant	
dl - $\alpha$ - tocopherol	2.0
'Irgasan' DP 300	0.1
Industrial methylated Spirits (740 p)	17.9
Perfume	q.s.
'Isceon' (Trade Mark) Propellants	80.0
(b) Deodorant cream	
Hexachlorophene	0.5
Amerchol (Trade Mark) L-101	10.0
Glycerol monostearate	13.5
Spermaceti wax	1.5
Tween (Trade Mark)	8.5
Isopropyl palmitate	3.0
Butylated Hydroxy Toluene	0.5
Water	62.5
Perfume	q.s.

#### WHAT WE CLAIM IS:—

1. A personal deodorant composition comprising:—

- 35 (i) a cosmetically acceptable antibacterial agent effective in destroying or inhibiting the growth of bacteria normally present on the human skin which break down the constituents of human apocrine perspiration into

unpleasant smelling byproducts, said antibacterial agent being hexachlorophene, dichlorophenol, trichlorophenol, tetrachlorophenol, di(trichlorohydroxyphenyl) ether, a p-hydroxybenzoic acid ester, o-phenylphenol, trichlorocarbaniide, a quaternary ammonium compound or a compound of formula (I):



wherein  $R_1$  is a chlorine or bromine atom,  $R_2$  is a chlorine or bromine atom and  $R_3$  is a hydrogen, chlorine or bromine atom, or a topically acceptable salt thereof,

(ii) a cosmetically acceptable anti-oxidant in an amount of from 0.2 to 5.0% by weight of the composition and

(iii) a cosmetically acceptable vehicle for (i) and (ii), ingredients (i) and (ii) constituting the only active ingredients of said composition.

2. A composition as claimed in claim 1 wherein the antibacterial agent is 2,4,4'-trichloro - 2' - hydroxydiphenyl ether.

3. A composition as claimed in claim 1 or claim 2 wherein the anti-oxidant is butylated hydroxytoluene or propyl gallate.

4. A composition as claimed in any one of claims 1—3 wherein the anti-oxidant comprises from 0.2 to 2.0% w/w of the composition.

5. A method of combatting human body odours which comprises applying to the skin a composition as claimed in any of claims 1—4.

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